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G-202-P00...

G-203-P00...

SELF-CONTAINED CONTROL BLOCK MAINTENANCE MANUAL (S.C.C.B.)

REFRIGERATION UNITS ORIENTED VERSION

For Programme Version 01

We kindly request that you study this manual carefully PRIOR to connecting and starting up any of our equipment. Should you have any queries or doubts, please contact us between 8 a.m. and 4 p.m. Any comments e-mailed will be appreciated.

Note !!! The date of the last update is given at the bottom of the consecutive pages, while information regarding the consecutive changes in the programme version and operation method are given at the end of page XVI.

Please, use only the most recent version of our manual. You will receive this version free, by post, after prior order.

I. GENERAL CHARACTERISTICS

NOTE: Due to the fact that this manual refers to two similar types of thermostats, the more developed G-202 thermostat will be referred to in further parts of this manual.

The self-contained control block, hereafter called G-202, constitutes a modern, convenient and easy-to-use equipment and has been made using microprocessor techniques with the application of automatic surface assembly process.

Owing to the twin part case and revolutionary technical design, the G-202 can be applied to any refrigerated counters or refrigeration chambers. The safe voltage operated control panel (5 V) may be installed in any place, without the necessity of cutting any additional openings or running a number of power supply cables far away from the equipment being controlled.

The G-202 has been equipped with two temperature sensors, which provides for the capability of connecting doors opening sensors to the control panel or to the actuating module, which are safe voltage operated (5 V), as well as four outputs allowing direct connecting of the 230 V operated equipment, with loading ability as summarized in table 1.

At the special request of the Customer, the G-202 may also be equipped with an additional evaporator frosting detection system, connected to the thermostat, causing the unit to automatically enter the defrosting mode.

If the G-202 is used in refrigeration chambers, it stabilizes the temperature, as well as controls automatic defrosting, the period of which may be adjusted to specific surrounding parameters; it is also equipped with a pushbutton for activating manual defrosting. As distinct from G-18-2, the G-202 has also been equipped with lighting system switch over that operates independently of the main circuit breaker (main isolator).

No special maintenance measures are required for these thermostats; the keyboard has been made from the special kind of oil, high temperatures resistant as well as resistant to most chemicals. However, cleaning this oil with sharp objects is not allowed. Instead, use the damp cloth and clean the front panel with it from time to time.

II. DENOTATION METHOD AND TECHNICAL DATA

Table 1 - Denotation method for GECO controllers.

Geco Denotation	G-	2	0X	-P	00	K	X	X	-M	XXXX	X
Position:	1	2	3	4	5	6	7	8	9	10	11

Nr	Description	Deno-tation	Meaning
1	Thermostat.	G	"Geco"
2	Range of operation.	2	Refrigeration systems.
3	Case type:	0X	02-Minipanel; 03- Big keyboard (also with potentiometer)
4	The beginning of denotation that refers to the panel configuration	P	(Keyboard)
5	Software version.	00	00 universal, operating like G21
6	Type input user temperature:	K	K- keyboard, P-Potentiometer
7	Equipped with light button	X	L – yes, 0 – not.
8	Sound Beep - buzzer:	X	B – yes, 0 – not

9	Start denotation that refers to the executive module configuration	M	
10	Which relays are installed.	XXXX	Detailed description below.*
11	Door open sensor	X	D- mechanical or magnetic door sensor; Y – optical door sensor; 0 –no possibility to connect door sensor;

* Additional information concerning relays denotation

Digits means existence of the relay, 0 – no relay

1 – compressor relay (must exist)

2 – light relay,

3 – fan relay

4 - heater/valve relay

The simplest thermostats are equipped with the following:

- 1000 – compressor
- 1200 - compressor and lighting system

While the mostly developed ones are equipped with the following:

- 1034 - compressor, fan, heater,
- 1234 - compressor, lighting system, fan, heater,

Another examples:

- 1030 - compressor and fan
- 1004 - compressor and heater
- 1230 - compressor, lighting system, and fan
- 1204 - compressor, lighting system and heater

Operating Voltage	-	230V +10% -15%
Ambient Temperature	-	+5°C to +40°C
Relative humidity	-	20% to 80%
Protection degree	-	IP65 on the front side of the control panel

Table 1 – Relays Denotation and Outputs Loads

Output	Load		
P1 – compressor	8A	2HP	1500W
P2 – lighting system	4A	-	750W
P3 – fan	4A	1HP	750W
P4 – heater/valve	8A	-	1500W

Note !!!


- **Currents as specified in the Table are currents consumed by particular equipment during normal operation and include starting currents of this equipment !!!**
- **The aggregate current consumed simultaneously may not exceed 10A !!!**

III. ORDERING METHOD

The following parameters need to be given in the order, namely:

1. Controller type, e.g. G-20X-P00
2. Relays to be installed 1 2 3 4
3. If the terminal in the executive module is to be connected to the door opening sensor – Letter D after the four digits
4. If the buzzer is to be installed – Letter B at the end of the description
5. The length of tape linking the actuating module and keyboard panel
6. Temperature sensors lengths
7. Length of the cable leading to the door opening sensor - if it is to be connected to the control panel (keyboard)
8. Also, door opening sensors can be ordered, operating fully without contact:
 - magnetic sensor with the range of 1 to 2 cm.
 - optical sensor with the range 1-2 cm.

IV. DELIVERY, INSTALLATION AND HOOKUP

1. In the appropriate place within the unit cut a hole of 20x30mm in size, however if masking frame of the panel is not used the size of the hole should be 58x109mm.
2. Mount the actuator on the rail and latch it. ***For store equipment the SCCB actuator module MUST be fixed to the floor!!!***
3. Any metal elements, through which the G-202 or its cables are run should be ground or protected otherwise. Fitting G-202 to enable direct action of water on it (e.g. water condensating on the bottom cover of the shop window), touching the outlet pipe from the evaporator etc. and changing considerably its temperature in relation to the ambient temperature (e.g. fitting in the immediate proximity of the compressor and its accessories, cooled and heated elements) is not allowed.
4. Cut the ribbon connecting the panel with the actuator into the desired length plus 2-3cm. Then, after running it through all penetrations, cut it once more by cutting its ends at right-angle and clip the plugs on it so that the end of the ribbon be hidden to approx. 0.5mm. The ribbon must be introduced perpendicular to the plug and clipped so as to make its twisting or non-parallel layout impossible. Connecting the ribbon to the connectors see *figure at the end of the instructions*.
5. After fastening the G-202, connect the power cables according to the description provided on the actuator wall. Depending on the G-202 version some outputs may be not used - on the label with the description they will not be described and the type symbol in the corresponding places will contain zeroes - ***do not connect any conductors to these outputs!!!***
6. The applied connectors are certified for continuous load of 16A!!! They incorporate fine thread and special lamellae, which prevent the wires from being cut, therefore only light tightening ensures maximum good contact and the use of greater force may lead to stripping out of the thread. ***In the result this may lead to the socket melting and short-circuit !!!***
7. Any cable surplus should be cut down or winded up and clamped using special plastic bands. The cables must be firmly secured on its entire length and must not get in contact with the compressor and its equipment
8. ***After connecting the unit to the power source there can be voltage across the lighting cable regardless of switching on or off the unit with the button  therefore the starter or the fluorescent lamp should be replaced only with the power cord disconnected from the plug!!!***

THE SAME APPLIES WHEN CARRYING OUT ANY OTHER REPAIRS !!!

9. If heaters are used, their power must be fitted correctly, which means that during failure of the G-202 or of the external contactor and switching them on for good, there were no possibility of fire or the device damage.








If great power heaters are used then the safety thermostat must be absolutely applied on the evaporator. This thermostat must operate on the different principle, for instance: mechanical thermostat.


V. THE PRINCIPLE FOR INSTALLATION OF SENSORS, TYPES OF PROTECTIVE CASES



1. For each type of the manufactured equipment a place for securing the sensors and the SCCB settings should be determined experimentally. Absolutely do not change the fastening location nor the way the sensors are secured nor modify SCCB settings without prior carrying out new tests relating to temperature stabilization and equipment defrosting cycle !!!
2. Fastening of the chamber sensor must be done in such a way so that it does not get in contact with food products and is not exposed to damage when cleaning the equipment. The sensor can be fixed using a special plastic bracket. This solution causes fast (on/off time delays see VI p. and 6 and 7) response of the sensor and the entire thermostat to the change in the air temperature in the unit. When desired or necessary to slow down and "smooth" the time of sensor response to the temperature changes we recommend to fix it to the metal part of the unit.
3. Fasten the evaporator sensor in the way to ensure maximum and good contact with the evaporator lamella and in place where ice remains for the longest time during defrosting. Its fastening should prevent it from being pushed out by the growing ice. The sensors, wherever possible, should be fixed vertically so that the cable exits from the bottom of the sensor.
4. **Sensor cables can be shortened or extended in any way, however with respect to the following rules:**
 - do not cut the sensor cable at a section smaller than 0.5 m. From the case
 - it is not recommended to extend the sensor cable to more than 20 m.
 - **THE SENSOR CABLES CAN BE CONNECTED TO THE TERMINALS OF THE ACTUATOR SENSORS IN ANY WAY!!!**
(in the same way as you connect the plug to the ~230V outlet)
 - for cable extension we recommend using OMY 2x0.5 mm type conductor
 - connect the extended cables with great care, by soldering each pair of cores and put thermally shrinkable jackets on them. Then apply water-proof silicone on the joint and clamp one more thermally shrinkable jacket on it.
 - whiten the ends of the conductors connected to SCCB with tin

VI. OPERATION METHOD





A - General Information

1. Having turned the equipment on, the three-second starting procedure is activated, during which the display will show two dashes, for the period of two seconds, and then for the period of one second, the version of the controller program will be displayed, as well as two to dashes. No activation of the equipment under control takes place then.
2. Following the completion of the starting procedure, two horizontal dashes signalling the energizing status will light up on the central segments of the display - if the unit has not been in "on" mode before!!!. The unit will be activated after pressing the pushbutton . The display will show the temperature value of the chamber sensor.
3. Having pressed and held down the pushbutton  for the period of a half second, the display will start blinking and showing the **evaporator** temperature, while after the consecutive five seconds, the G-202 will automatically re-enter the chamber temperature readout mode. **Note!!!** This function is also activated during the defrosting time, when the display shows the „dF” symbol. The temperature of the chamber sensor can also be seen by pressing  for 0,5 second, which will make the display show the chamber temperature (*without blinking*) to automatically re-enter the displaying of the „dF” symbol mode after the consecutive five seconds.
4. The compressor activation is signalled by the small red diode in the right, bottom corner of the display showing the temperature. This allows easier check of possible damage and mall functions to the system.
5. If the compressor should have turned on, but the compressor has not been turned on due to the activation of any of the protection systems (see points 6, 7, 10 and 11), the dot signalling the compressor's operation will be blinking. When the protection system preset time preset elapses, the daughter will stop blinking and will be lit permanently, while the compressor will be activated .
6. The delay in turning the compressor on **after its activation temperature is reached** (user set temperature minus bottom value of the hysteresis) is equal to 30 seconds. If the temperature drops again during this time. The condition of exceeding 30 seconds will be verified again. This is designed to protect the compressor against unnecessary activation due to e.g. articles placement, droughts, etc.
7. After every reaching of the preset temperature (user set temperature minus bottom value of the hysteresis), as well as following any power failure or voltage drops below 175 volts, the G-202 will make impossible for the compressor to be activated for the period as specified by the 'c2' parameter. If, however, 'c2'=0min, the protection time will last 60 seconds following any power failure.
8. Having turned the equipment on using the  pushbutton, the 5-second delay will appear in the compressor activation. This is to cancel the power failure protection from point 7 – this will also pertain to the time specified by the 'c2' parameter, following the compressor's prior deactivation. This allows faster compressor operation check.
9. The controller has been equipped with alarm features, providing information regarding sensor's damage. Depending on the sensor(s)' status, the controller performance will be different.
 - The mall function to the chamber temperature sensor will make the display show the **A1** symbol. The controller will activate the compressor in the time cycle (clock-based control) in accordance with times specified in 'c8' i 'c9' parameters. The defrosting process will function as usual.
 - If the evaporator sensor is damaged, the display will show the **A2** symbol. **The manual and automatic defrosting is blocked then!!!** The only possibility of defrosting the unit is to press the pushbutton  in order to turn off the unit, and then wait for the ice to thaw.
 - If the sensors have been damaged, only the **A1** symbol will be displayed. Having repaired the chamber sensor, the **A2** symbol will start to be displayed.
10. If the buzzer has been installed in the controller – see *p. II*, the buzzer will signal any pressing of any button. If the controller is turned off (two horizontal dashes on the display are seen then), the buzzer will signal only if the following pushbuttons are pressed, namely:  and .

11. The lighting system activation and deactivation will take place after pressing the  pushbutton. This will be signalled by the green LED. If the door opening is reason for lighting system activation, the green LED will not light up.

The button  will operate independently of the thermostat current switch over - .

B - Defrosting

1. If the necessity for the additional defrosting occurs, due to difficult operating conditions, press the  pushbutton. This will *make the green LED light constantly on the*  pushbutton, while the „dF” symbol will appear on the display, rather than temperature measurement symbol, and this is where the unit will enter the defrosting cycle.
2. If the defrosting occurs, and the temperature on the evaporator is higher than set in the ‘d2’ parameter, the unit, after some 10 seconds, will enter the defrosting exiting mode, to resume the operation when the said mode terminates.
3. If the defrosting occurs, and the temperature on the evaporator is lower than set in the ‘d2’ parameter, the G-202 will activate the defrosting process, and after reaching the temperature as specified in the ‘d2’ parameter, **the unit will enter the defrosting exiting mode** (this status is signalled by the green LED, which blinks on the  pushbutton). The heaters version will then enter the defrosting exiting mode, comprising two consecutive Phases:
 - **Thawing Phase** – where the compressor and fans are turned off for the period as specified by the ‘c3’ parameter;
 - **Evaporator Freezing Phase** – where only the compressor is operated, in order to lower the temperature of the evaporator to the temperature as specified by the ‘c4’ parameter, prior to reactivating the fans. The maximal freezing time can not be exceeded, regardless of whether the evaporator has achieved the temperature of ‘d4’, specified by the ‘c4’ parameter.
4. The procedure of exiting the defrosting mode is terminated with the activation of fans, turning off the „dF” symbol on the display and turning off the green LED blinking on the pushbutton .
5. Should the fans be absent or not connected to the S.C.C.B. system, the unit will act as if they are installed.
6. The defrosting process will be terminated *following the achieving of the evaporator temperature as preset in the ‘d2’ parameters, or if the time preset by the ‘c1’ parameter has been exceeded.*
7. Having turned off the „dF” symbol and terminated the defrosting process, the display will show the temperature as stored right before the defrosting commencement, for the period of time as specified by the ‘c7’ parameter – this is intended for preventing claims with respect to “violent temperature fluctuations in the unit”.
8. The unit performance is the same as in the case of manual and automatic defrosting.

C – The Door Opening Sensor Operation Principle

1. If the door has been opened, the fan will be stopped immediately. In addition to the above, depending on the ‘r7’ parameter setting, the light may be turned on in the G-202 unit. The display shows the temperature.
2. If the door has not been closed, after 30 seconds, the “dr” symbol will be constantly lit on the display. If the buzzer is installed in the controller, the short lasting sound signal will be repeated every 30 seconds.
3. If the door continues to be open after the time as specified in the ‘r8’ parameter, the alarm will be activated, which will be signalled by the display blinking with “dr” symbol, and with the sound signal if the buzzer is installed. This is when the compressor will be turned off.
4. If the R8 = 0 the alarm will be activated immediately after opening the door.
5. The alarm may be silenced through pressing any pushbutton. Closing the door deactivates the alarm and normal operation is resumed.

6. The controller allows connecting both the door opening mechanical sensor (R6=01), and the mechanical or magnetic sensor, disconnected in the course of door opening (R6=02).

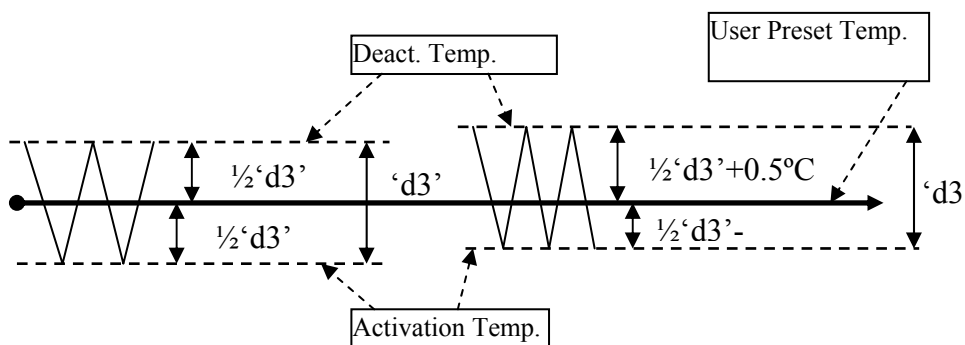
Hysteresis

When programming the 'd0' i 'd1' parameters (the minimal and maximal user preset temperature) attention should be paid to the fact that the 'd3' hysteresis value causes additional shifting of the temperature to higher or lower values with relation to the user preset temperature level.

This is particularly significant with regard to the so-called "plus" equipment which should always be operated at the temperatures above 0°C.

As the Manufacturer of the refrigeration unit (refrigerated counter) (temperatures above 0°C), we require the unit to allow the operation within the temperature range that does not exceed the values specified below:
Deactivation min: 2°C. Activation max: 10°C

Symmetric hysteresis for 'd3' even values	Symmetric hysteresis for 'd3' odd values
<p>Example No. 1.</p> <p>The 'd3' hysteresis it set at, for example 2°C</p> <p>For this hysteresis value, the parameters should be set as follows: 'd0' at 3°C and 'd1' at 9°C</p>	<p>Example No. 3.</p> <p>The 'd3' hysteresis it set at, for example 3°C</p> <p>For this hysteresis value, the parameters should be set as follows: 'd0' at 3°C and 'd1' at 8°C</p>
<p>Example No. 2.</p> <p>The 'd3' hysteresis it set at, for example 4°C</p> <p>For this hysteresis value, the parameters should be set as follows: 'd0' at 4°C and 'd1' at 8°C</p>	<p>Example No. 4.</p> <p>The 'd3' hysteresis it set at, for example 5°C</p> <p>For this hysteresis value, the parameters should be set as follows: 'd0' at 4°C and 'd1' at 7°C</p>



VII. UNIT PARTICULAR COMPONENTS ACTIVATION GRAPHS

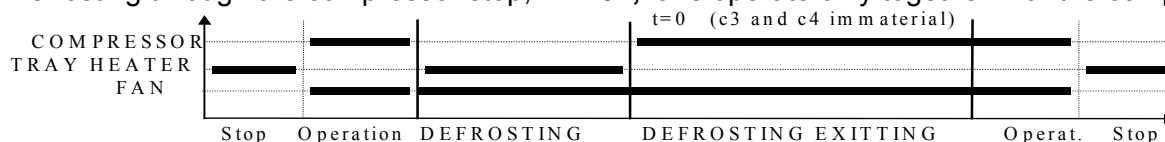
A thick line denotes **activation**, while the dashed one means **deactivation** of the particular equipment. The defrosting exiting mode comprises two Phases – see Chapter V p.3.

The “**Stop**” field denotes **deactivation**, while the “**Operation**” field denotes the compressor’s **activation** due to exceeding the preset temperature, taking account of the “d3” preset hysteresis value. The heater on the figure 1 is intended for heating the tray and/or the water discharge hose from the evaporator. The heater on figure 4 is intended only for heating the water discharge hose from the evaporator.



IF ERRONEOUS PARAMETERS ARE SET, THE UNIT WILL FAIL TO OPERATE PROPERLY !!!

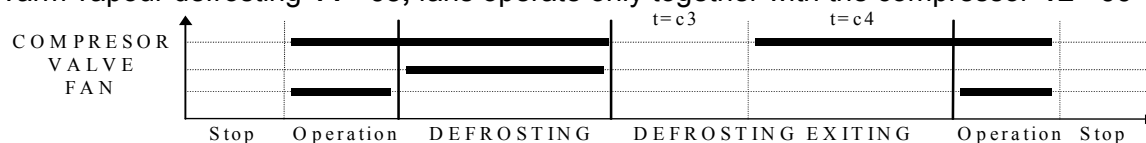
1. Defrosting through the compressor stop, ‘r1’=01, fans operate only together with the compressor, ‘r2’=00



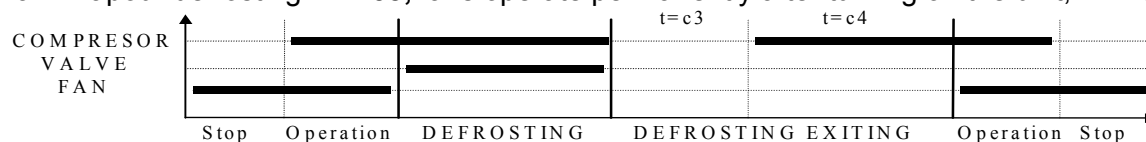
2. Defrosting through the heater, ‘r1’=02, fans operate only together with the compressor ‘r2’=00



3. Warm vapour defrosting ‘r1’=03, fans operate only together with the compressor ‘r2’=00



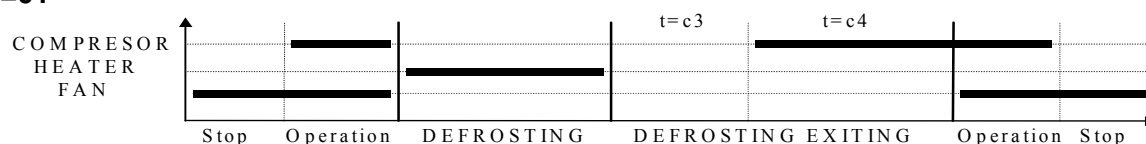
4. Warm vapour defrosting ‘r1’=03, fans operate permanently after turning on the unit, ‘r2’=01



5. Defrosting through the compressor stop ‘r1’=01, fans operate permanently after turning on the unit ‘r2’=01













6. Defrosting through the heater, ‘r1’=02, fans operate permanently after turning on the unit ‘r2’=01



VIII. SYSTEM PARAMETERS PROGRAMMING

Having activated and checked the unit operation (standard settings are factory set), start entering system parameters to the G-202 unit.

For this purpose, turn off the unit by pressing the  pushbutton. *Then press the buttons  and , depress and hold, at the same time press the  pushbutton.* All the three pushbuttons need to be depressed and held for at least the period of 3 seconds. If any of these buttons has been released during the said time, the unit will abandon the programming mode. When the unit has assumed the programming mode, the LEDs on the  and  pushbuttons will start to blink, while the display will show the 'c0' per one second. Then, the value of this parameter most recently programmed will be shown. Enter the required settings, using the   pushbuttons, any longer pushbutton holding time causing the data "fast rewinding/forwarding". Then press , in order to approve the data entered and start entering the next parameter.

Partial entering of the settings is also possible. If any alteration of the particular setting is not required, simply press the  pushbutton and the G-202 unit will assume the next parameter setting mode.

Note !!!

The refrigeration unit Manufacturer may block access to a portion of or even to all parameters available from the keyboard, by means of the computer programming unit. If this is the case, and the alteration of any of the blocked parameters is attempted, the display will show the 'bL' symbol for the period of 1 second.

Remarks on SCCB programming.










1. ***IT IS THE RESPONSIBILITY OF THE MANUFACTURER OF THE REFRIGERATING UNIT AND THE SERVICE ENGINEER TO ENTER NEW SETTINGS REQUIRED FOR NORMAL FUNCTIONING OF THE UNIT !!!***
2. Do the programming carefully, preferably writing down earlier the values of the particular parameters on a sheet of paper. Remember that **any error** made when programming some parameters will have very serious consequences including damage of the product and the refrigerating unit.
3. Having programmed and started the unit check it for proper operation and recheck if the settings of the system parameters are correct.
4. Transfer of the Service Instructions or any information regarding the mode of programming the SCCB system parameters to the end user is absolutely not allowed. The end user should receive **only and exclusively** a copy of the section IX of these instructions.

Table 2: Parameters Denotation


Parameter	Description	Min	Max	Step	Factory setting
c0	The defrosting frequency. Note!!! If this parameter is set to "0" only manual defrosting will be available, while any automatic defrosting will be unavailable!!! If this parameter is set to "-01", neither manual nor automatic defrosting will be available!!!	0 -01	24	1h	6h
c1	Maximal defrosting time if the evaporator has not reached the preset temperature (d2 parameter) Note!!! If this parameter is set to „-01” no time limit will be available	10 -01	99	1min	30min
c2	Minimal compressor stopping time	0	15	1min	3min
c3	Evaporator thawing time	0	15	1min	2min
c4	Evaporator freezing time, after which the fans will start to operate regardless of whether the evaporator has reached the temperature as set in 'd5' setting	1	25	1min	10min
c5	Maximal compressor operation time 0 – denotes the absence of test	0	99	1min	40min
c6	Compressor stopping time following the activation of the protection system as set by the 'c5' parameter	0	99	1min	10min
c7	Time for which the temperature measured directly prior to the defrosting commencement will be shown after the defrosting completion ('c4' parameter).	0	60	1min	5min
c8	Compressor operation time if controlling sensor has been damaged	1	99	1min	25min
c9	Compressor stopping time if controlling sensor has been damaged	1	60	1min	5min
d0	User set minimal temperature	-40	20	1°C	1°C
d1	User set maximal temperature	d0+1	40	1°C	10°C
d2	Evaporator temperature at which the defrosting terminates	0	40	1°C	5°C
d3	Hysteresis value	1	10	1°C	2°C
d4	Chamber sensor rescaling with relation to actually measured temperature	-10	10	1°C	0°C
d5	Evaporator temperature at which fans will start their operation after the defrosting process completion.	-30	10	1°C	-5°C

r1	Evaporator defrosting method, the parameter set as follows: 01 – defrosting through the compressor stop 02 – heater assisted defrosting 03 – warm vapour defrosting (reversed cycle)	01	03	1	02
r2	Evaporator fans operation method, the parameter set as follows: 00 – fans operate only together with the compressor 01 – fans operate permanently after activating the power supply NOTE!!! This parameter does not affect the cycle and method of evaporator defrosting	00	01	1	01
r3	Temperature control method, the parameter set as follows: 00 – normal control 01 – the temperature is controlled in accordance with the evaporator sensor measurements; the programmed temperature and D0, D1, D2 i D3 parameters pertain to the evaporator sensor and the chamber sensor measurements are displayed.	00	01	1	00
r5	Defrosting activation conditions during the unit start. 00 – operation commencement without defrosting 01 – if the power failure has occurred during defrosting, the defrosting process will be activated 02 – defrosting after each power supply activation.	00	02	1	00
r6	Door opening sensor option. 00 – no door opening sensor present 01 – door opening sensor available, connected when door is open 02 – door opening sensor available, disconnected when door is open	00	02	1	01
r7	Lighting system activation method 01 – only door sensor assisted lighting system control 02 – only pushbutton assisted lighting system control 03 – door sensor and pushbutton assisted lighting system control	01	03	1	03
r8	Time from the door opening to the alarm activation. The dr” symbol will be displayed 30 seconds after opening of the door. If the controller has been equipped with a buzzer, a short sound signal is emitted, repeated every 30 seconds. When the time as specified by the R8 parameter has elapsed, the alarm will be activated and signalled through the dr” symbol blinking on the display, and, if the buzzer is present in the controller, the sound signal will be emitted. The compressor will be stopped. 0 – denotes the immediate alarm activation	0	10	1min	1min
r9	Place where the door opening sensor is installed: 01 – sensor connected to the module accommodating relays 00 – sensor connected to the control module –Note: A special cable with a plug should be ordered !!!	00	01	1	01

IX. G-202 MAINTENANCE – USER PART

1. Having turned the equipment on, the display will show two dots, for the period of one second, and then the version of the controller program will be displayed as well as dots for the period of one second. Following the completion of the starting procedure, two horizontal dashes signaling the energizing status will light up on the central segments of the display. The unit will be activated after pressing the pushbutton . The display will show the temperature value in the device (temperature readings from the cold room sensor)
2. Setting of the user temperature of the stabilization in the counter.
 - To change settings press the  button. The LED green diode lights on the button and recently entered value of the temperature is displayed.
 - Buttons:   are used to set the temperature. Each longer holding of the button causes faster “changes” of the temperature settings.
 - After setting desired temperature one should press the  button again. After that the green LED diode on the button will light off, and the G-202 will exit the programming mode and start operating using a new program.
 - If the  button is not pressed the G-202 will automatically exit the programming mode after 5 seconds from the last button press. The temperature value will not be stored in that case.
3. Turning on/off the lighting system.
 The lighting system activation and deactivation will take place after pressing the  pushbutton. This will be signaled by the green LED diode. The button  operate independently from the thermostat current switch .

IMPORTANT !!!

If extra defrosting is necessary due to severe operating conditions then press button . The green LED will light up on the button, and "dF" will appear on the display instead of the temperature measurement and the unit will enter the defrosting cycle.

Defrosting will end automatically after the preset time elapses or on reaching the factory preset temperature.

Carrying out any repairs on one own causes loss of warranty and may bring to en electric shock and other threat. Therefore all kinds of repairs should be carried out by authorized and qualified personnel!!!

X. TROUBLESHOOTING

Failure symptoms	Check
1. The display is off even if G-202 is connected to the power supply	Check: - if 220V voltage is present on the power supply terminals L and N - correct connection of the actuator to the control panel - remove and reinsert the ribbon sockets - connect another ribbon
2. The compressor will not start despite its power-on signaling - red LED	Check: - 220V voltage presence on terminals K and N - If present, then check the compressor - if not, then check correct connection of the actuator with the control panel - connect another ribbon
3. Defrosting heater does not switch on	Check: - if there is voltage 230V on clamps as described on the casing of the controller - if there is, check the heater - if not then check the connection of the executive module with a control panel - connect another ribbon
5. Wrong temperature indications	Check: - connections of the sensors to the connectors - value of the parameter 'd4' - correct fastening of the sensor - condition of the sensor cable – the cable can not show any damages - carefully the appearance of the external surface of the sensor case for any signs of mechanical damages.
6. The desired temperature cannot be set	Check: value of the parameter 'd0' and 'd1' ($d0 < d1$)
7. Blinking of dots on the display, cannot be turned off	Check : - power supply voltage value - condition of the power supply connectors - tightening of the power supply connectors - correct connection of the actuator to the control panel - connect another ribbon

8. 'Abnormal',	Check:
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<p><i>'strange' behavior of the unit.</i></p>	<ul style="list-style-type: none"> - if 230V voltage is present on the power supply terminals L and N - condition of the power supply connectors - grounding of the refrigerating unit - condition of the electrical installation and number of the units connected to one phase - if you have the type of thermostat (label with output scheme) designed for your unit - if the control panel, actuator or the ribbon plugs have been exposed to water or any other liquid - if the control panel, actuator or ribbon plugs are exposed to moisture or rapid temperature fluctuations - correct connection of the actuator to the control panel - connect another ribbon
<p><i>9. Problems with defrosting the unit</i></p>	<p>Check:</p> <ul style="list-style-type: none"> - value of the parameter 'd2' and 'c0', 'c1' - value of the parameter 'c1'. This is the maximum unit defrosting time, whether the evaporator has reached the programmed temperature of the end of defrosting, or not (parameter 'd2'). If this time is too short complete defrosting of the unit will not be possible - correct fastening of the sensor to the evaporator lamella. IT MUST BE FIXED SECURELY AND ADHERE CLOSELY TO THE LAMELLA!!! - if the evaporator sensor is fixed in place, where the ice remains for the longest time, if not, check the temperature on the sensor at the moment, when the last ice lumps fall off the evaporator. THIS IS THE TEMPERATURE WHICH SHOULD BE ENTERED AS PARAMETER 'd2'
<p><i>10. The unit does not reach the preset temperature and does not 'refrigerate'</i></p>	<p>Check:</p> <ul style="list-style-type: none"> - the temperature programmed by the user - value of the individual parameters, and in particular 'c2', 'c5', 'd0', 'd1' - section 9 - <i>Problems with defrosting the unit</i>. If unit defrosting is not complete, the unit will not be able to reach the programmed temperature !!! - the way and place of securing the chamber sensor - if any side panes have been fitted in the rack or sliding panes in the glass case - IF THE UNIT IS LEFT IN THE DRAFT OR IN THE SUN !!! - if there are no fans or air conditioning units installed on the ceiling or nearby - if condenser is clean - temperature in the store (each manufacturer specifies max. working temperature of the unit) - gas volume, fans, evaporator heater, hose draining water from the evaporator
<p><i>11. Wrong operation of the door open sensor</i></p>	<p>Check:</p> <ul style="list-style-type: none"> - 'r6' and 'r7', 'r9' parameter value - sensor connection correctness - if the sensor is connected to the actuator then check the connection between executive module with the control panel - connect another tape

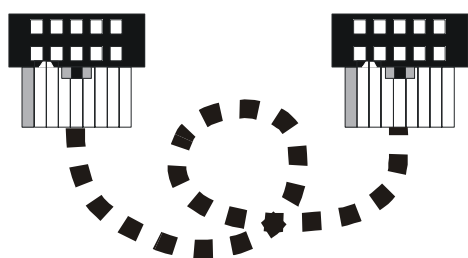
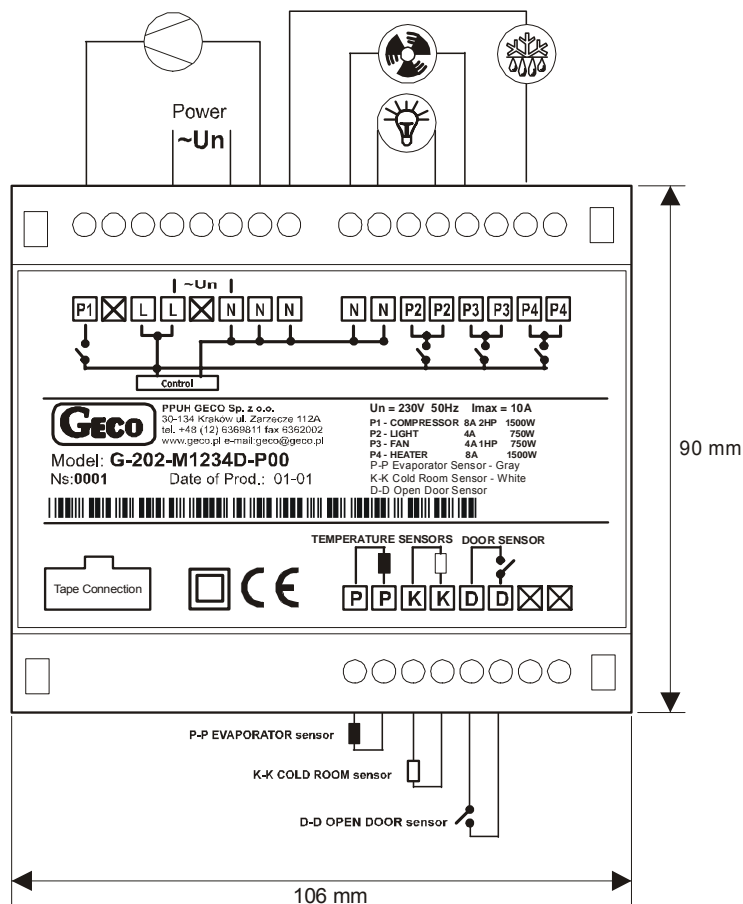
XI. RETURNS FOR REPAIR

In case of failure and returning SCCB for repair, it is absolutely required to completely fill in the replacement application form enclosed at the end of this instructions. We suggest making a Xerox copy of the form rather than cutting it.

PPUH 'GECO' reserves the right to refuse a free repair of the unit, if there is no form, the form is not filled in completely or the seals are broken !!!

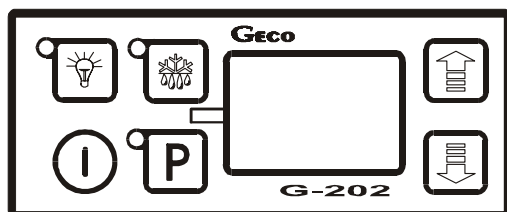
P.P.U.H. 'Geco' Sp. z o. o. is not responsible for loses and damages resulting from provision of information on the method of making changes in the system data of G-201 by the producer or its service to the final client, incorrect or non-professional assembly and for loses caused by defective operation of the appliance.

XII. SCHEME OF CONNECTIONS. ACTUATOR (EXECUTIVE MODULE) VIEW. THE METHOD OF CONNECTION OF THE EXECUTIVE MODULE WITH A CONTROL PANEL USING THE TAPE.

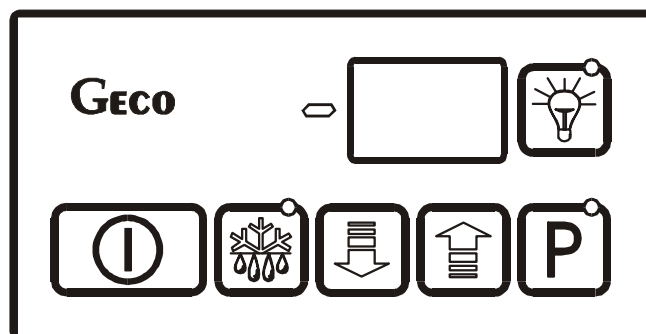


THE DIAGRAM SHOWS TAPE CONNECTIONS FROM THE INPUT HOLES VIEW. DIAGRAM SHOWS ALSO THEIR PLACEMENT BETWEEN EACH OTHER, AND ALSO AFTER CORRECT REALIZATION OF THE CONNECTION.

G 202 CONTROL PANEL FRONT VIEW



G 203 CONTROL PANEL FRONT VIEW



SERVICE STAMP 	REPLACEMENT FORM S.C.C.B EMPLOYEE NAME: _____ DATE: _____ REFRIGERATION DEVICE INFORMATION MANUFACTURER: _____ TYPE: _____ COMPRESSOR TYPE: _____ SERIAL NUMBER: _____ DATE OF PRODUCTION: _____
S.C.C.B. INFORMATION Failure: PANEL <input type="checkbox"/> ACTUATOR <input type="checkbox"/> SERIAL NUMBER: _____ TYPE: 0- _____	
DETAILED DESCRIPTION OF THE S.C.C.B. FAILURE 	
DESCRIPTION OF THE REFRIGERATION DEVICE FAILURE 	
DAMAGED: COMPRESSOR <input type="checkbox"/> FAN <input type="checkbox"/> HEATER <input type="checkbox"/> LIGHT <input type="checkbox"/> GAS LACK/SURPLUS <input type="checkbox"/>	
ATMOSPHERIC DISCHARGE <input type="checkbox"/> VOLTAGE LOSSES <input type="checkbox"/> VOLTAGE FALL <input type="checkbox"/> WIRING SYSTEM DAMAGED <input type="checkbox"/> LACK OF NEUTRALIZATION <input type="checkbox"/>	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> MAINS VOLTAGE _____ V </div> <div style="border-left: 1px solid black; padding-left: 10px;"> SERVICE SIGNATURE: </div> </div>

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SERVICE STAMP**REPLACEMENT FORM S.C.C.B**

EMPLOYEE NAME: _____

DATE: _____

**REFRIGERATION DEVICE
INFORMATION****S.C.C.B. INFORMATION**Failure: PANEL ☐ ACTUATOR ☐

SERIAL NUMBER: _____

TYPE: 0- _____

MANUFACTURER: _____

TYPE: _____ COMPRESSOR TYPE: _____

SERIAL NUMBER: _____

DATE OF PRODUCTION: _____

DETAILED DESCRIPTION OF THE S.C.C.B. FAILURE

DESCRIPTION OF THE REFRIGERATION DEVICE FAILURE

DAMAGED: COMPRESSOR ☐ FAN ☐ HEATER ☐ LIGHT ☐ GAS LACK/SURPLUS ☐
ATMOSPHERIC DISCHARGE ☐VOLTAGE LOSSES ☐VOLTAGE FALL ☐WIRING SYSTEM DAMAGED ☐LACK OF NEUTRALIZATION ☐MAINS
VOLTAGE

V

SERVICE SIGNATURE: